SYNOPSYS®

# Using the ModelSource 640-pin Generic Device Adapter

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# Preface

## About This Application Note

This application note describes the features and use of the ModelSource™ 640-pin Generic Device Adapter (hereafter referred to as the "Adapter"*)*, which allows you to model a 640-pin device using ModelSource modeling systems.

This application note assumes that you are familiar with model-building procedures as described in these Synopsys documents:

- *Logic Model Development Manual*
- *Shell Software Reference Manual*
- *ModelSource User's Manual*
- *LM-family Modeler Manual*

## Related Documents

To see a complete listing, refer to the *Guide to Hardware Modeling Documents*.

## Manual Overview

This manual contains the following chapters and appendixes:

| | |
|---|---|
| **Preface** | Describes the application note and lists the typographical conventions and symbols used in it; tells how to get technical assistance. |
| **Chapter 1 Describing a 640-pin Logic Model** | Describes the hardware and software needed to create a Logic Model using the 640-pin Generic Device Adapter. |

| | |
|---|---|
| **Chapter 2<br>Building the Daughterboard** | Provides specifications for building the 640-pin Adapter Daughterboard. |
| **Chapter 3<br>Connecting the Daughterboard** | Describes the Adapter and provides a procedure for connecting it and the Daughterboard. |
| **Chapter 4<br>Developing the Shell Software** | Briefly outlines software development tasks and provides references. |
| **Chapter 5<br>Completing the Model** | Describes mounting the Adapter onto the Modeling Systems; labeling the Daughterboard; verifying the model; and unmounting the Adapter. |
| **Appendix A<br>J1–J6 Connector Pinouts** | Provides a pinout listing for J1-J6 connectors. |

# Typographical and Symbol Conventions

- **Default UNIX prompt**

  Represented by a percent sign (%).

- **User input** (text entered by the user)

  Shown in **bold** type, as in the following command line example:

  ```
  % cd $LMC_HOME/hdl
  ```

- **System-generated text** (prompts, messages, files, reports)

  Shown as in the following system message:

  ```
  No Mismatches: 66 Vectors processed: 66 Possible
  ```

- **Variables** for which you supply a specific value

  Shown in italic type, as in the following command line example:

  ```
  % setenv LMC_HOME prod_dir
  ```

  In this example, you substitute a specific name for *prod_dir* when you enter the command.

- Command syntax

  **Choice among alternatives** is shown with a vertical bar ( | ) as in the following syntax example:

  ```
  -effort_level  low | medium | high
  ```

  In this example, you must choose one of the three possibilities:  low, medium, or high.

**Optional parameters** are enclosed in square brackets ( [ ] ) as in the following syntax example:

*pin1* [*pin2 ... pinN*]

In this example, you must enter at least one pin name (*pin1*), but others are optional ( [*pin2 ... pinN*]).

# Getting Help

If you have a question while using Synopsys products, use the following resources:

1. Start with the available product documentation installed on your network or located at the root level of your Synopsys CD-ROM. Every documentation set contains overview information in the intro.pdf file.

   Additional Synopsys documentation is available at this URL:

   http://www.synopsys.com/products/lm/docs

   Datasheets for models are available using the Model Directory:

   http://www.synopsys.com/products/lm/modelDir.html

2. Visit the online Support Center at this URL:

   http://www.synopsys.com/support/lm/support.html

   This site gives you access to the following resources:

   - SOLV-IT!, the Synopsys automated problem resolution system
   - product-specific FAQs (frequently asked questions)
   - lists of supported simulators and platforms
   - the ability to open a support help call
   - the ability to submit a delivery request for some product lines

3. If you still have questions, you can call the Support Center:

   **North American customers:**
   Call the Synopsys Eaglei and Logic Modeling Products Support Center hotline at 1-800-445-1888 (or 1-503-748-6920) from 6:30 AM to 5 PM Pacific Time, Monday through Friday.

   **International customers:**
   Call your local sales office.

## The Synopsys Website

General information about Synopsys and its products is available at this URL:

http://www.synopsys.com

# Comments?

To report errors or make suggestions, please send e-mail to:

doc@synopsys.com

To report an error that occurs on a specific page, select the entire page (including headers and footers), and copy to the buffer. Then paste the buffer to the body of your e-mail message. This will provide us with information to identify the source of the problem.

# 1
# Describing a 640-pin Logic Model

This chapter describes the necessary components and provides a procedural summary for building a 640-pin Logic Model.

## Hardware Requirements

To build a complete 640-pin Logic Model using the 640-pin Adapter, you need the following hardware:

- The device you want to model, henceforth referred to as the device under test (DUT). The DUT can have up to 640 input, output, and I/O signals, exclusive of supply voltage and auxiliary signals. The DUT can include more than one physical package, as long as the components fit within an area approximately 6” x 6”.
- One 640-pin Generic Device Adapter Daughterboard, henceforth referred to as the “Daughterboard”, to which you attach the DUT.
- Four ModelSource modeling systems, *either* 4 MS3200 units *or* 4 MS3400 units. You cannot mix these two types of units.
- One 640-pin Adapter, which provides the interface between the modeling systems and the Daughterboard.

# Software Requirements

To support the 640-pin Logic Model, you need the following software:

- User-created Shell Software files, described in the Shell Software Reference Manual.
- The product-specific Shell Software files GEN640.ADP and GEN640.PKG, provided by Synopsys and described in later text.
- R3.3b or later of the Runtime Modeler Software.
- The lm utility, R3.3b or later, for labeling the Daughterboard.

# Procedural Summary

The steps in building a 640-pin Logic Model are as follows:

1. Build the Daughterboard and attach the DUT to it.
2. Connect the Daughterboard to the Adapter.
3. Develop the model Shell Software.
4. Mount the Adapter onto the ModelSource modeling systems.
5. Label the Daughterboard.
6. Verify the model.

Steps 1, 2 and 4 are described in detail in this application note. Steps 3, 5, and 6 are summarized here; for more details, refer to the *Logic Model Development Manual*.

# 2 Building the Daughterboard

This chapter describes the specifications you must meet when building the Daughterboard.

## Daughterboard Description

Figure 1 shows the physical specifications of the Daughterboard from the component side. The Daughterboard is designed to have a footprint area in excess of 10” by 14”, allowing for a multi-chip DUT.

Following are descriptions of some of the items shown on the drawing. All connectors are to be installed from the far side.

- Guide pin holes: These are designed to mate with the guide pins on the Adapter to ensure correct orientation when attaching the Daughterboard to the Adapter.
- Board stiffeners: Four (two long and two short) are required around the perimeter of the Daughterboard to reinforce it. Fabrication drawings for compatible long and short stiffeners are provided in Figure 3 on page 15.
- Connectors J1-J6: These are to be installed from the far side, and are designed to mate with corresponding connectors on the Adapter. The location of Pin A1 of each connector is indicated on the drawing. Details of the connector pins are provided in text that follows.

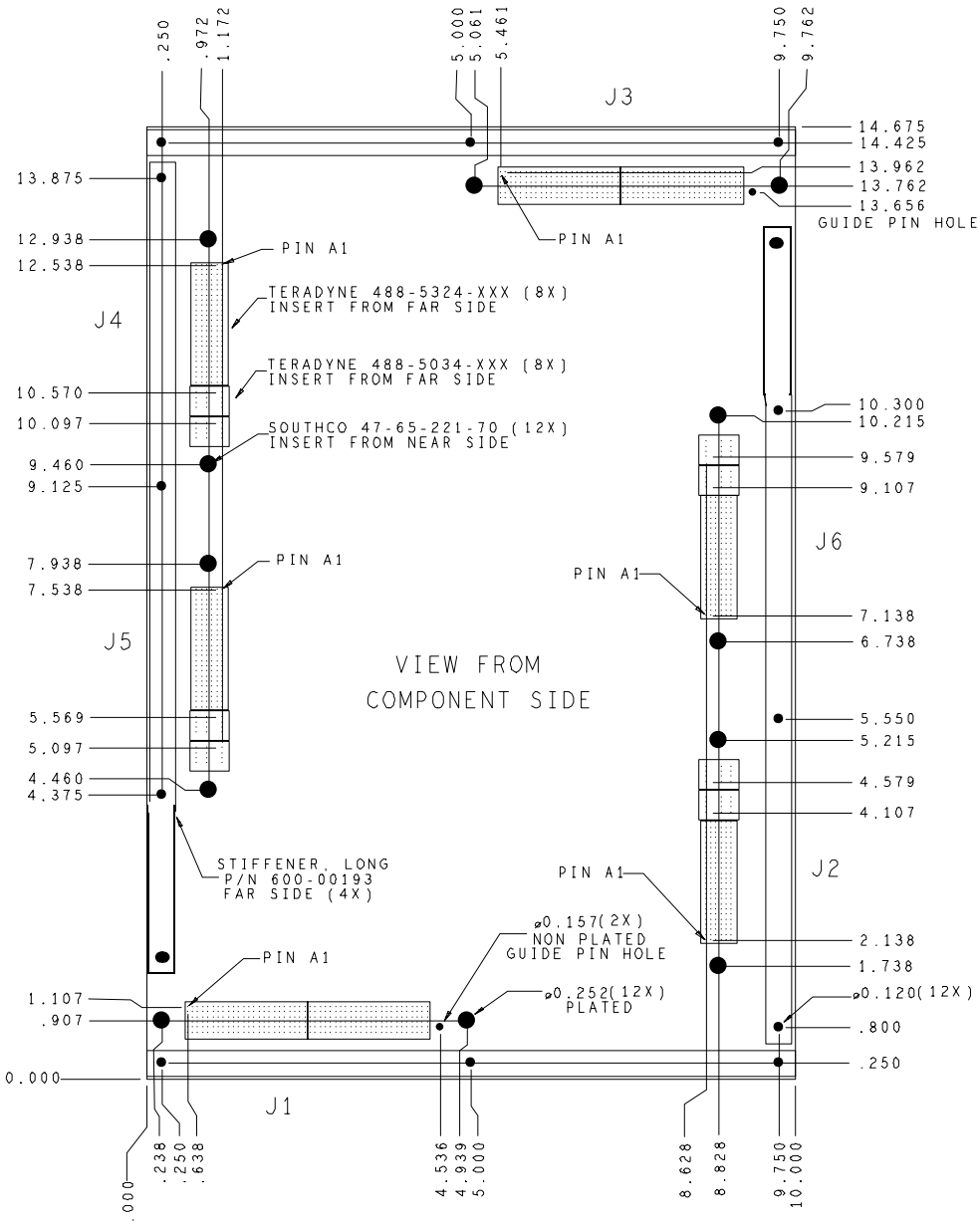



**Figure 1: 640-pin Adapter Daughterboard**

# Connector Pin Detail

Connectors J1–J6 include the connections (DUT1–DUT640) between the DUT and the Adapter through the Daughterboard and, in addition, supply voltage, ground connections, and various auxiliary signals. Figure 2 shows details of J1–J6 connector pins, from the component side. Pinouts are listed in “J1–J6 Connector Pinouts” on page 29.

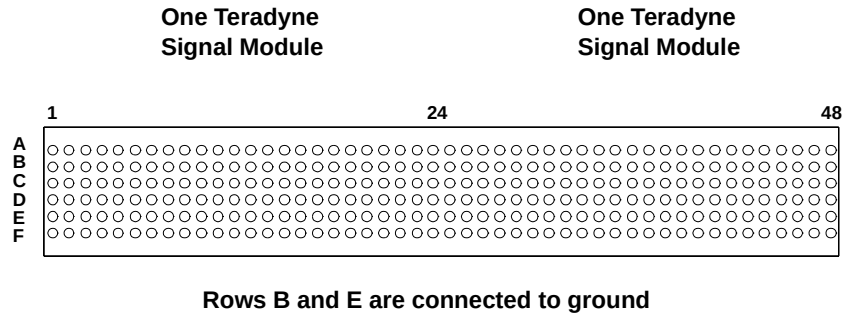
## Connectors J1 and J3

These connectors include two each of Teradyne signal modules, and have 6 rows of 48 pins each. You will notice in Appendix A that no connections are listed for Rows B and E; these are exclusively ground.

## Connectors J2, J4, J5 and J6

These connectors include one each of Teradyne signal modules (A1–F24, at the left of the figure) and two each of Teradyne power modules (AP1–FP4 and AP5–FP8, at the right of the figure). As with connectors J1 and J3, the left (signal module) side has rows B and E exclusively connected to ground. The right (power module) side has no rows B, C, or E.

**Connectors J1 and J3**




**Connectors J2, J4, J5 and J6**

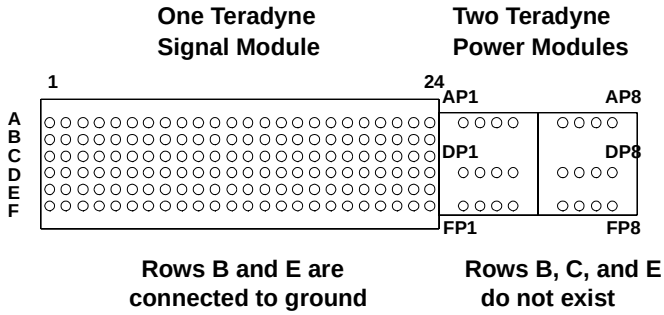



**Figure 2: Connector Pin Detail, Shown from Component Side**

# Parts List

The required parts are as follows:

- Eight Teradyne HDM signal modules, 488-5324-*XXX*. These are available either as press fit or solder tail, in a variety of tail lengths. The last three digits (*XXX*) of the part number depend on which type you choose; for specific part numbers, see the Teradyne product documentation.
- Eight Teradyne HDM power modules, 437-5034-500. These are currently available only as solder tail.
- Twelve Southco retractable screw fasteners, 47-65-221-70.
- To mount the stiffeners:
  - Fourteen 4-40 1/4” pan head Phillips screws

- Fourteen #4 lock washers
- Fourteen #4 flat washers

- One EEProm, Catalyst semiconductor CAT93C86.

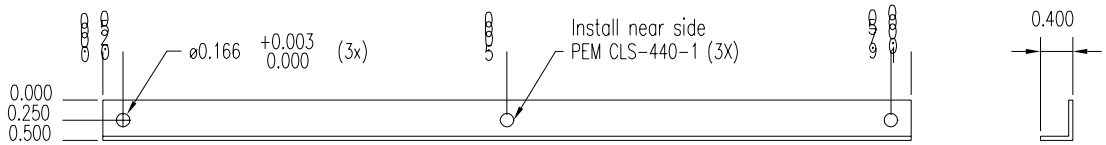
**Note**

The above does not include the package type designation; that is up to the model designer.

- Two Synopsys board stiffeners (short), 600-00193 (or build according to specifications).
- Two Synopsys board stiffeners (long), 600-00XXX (or build according to specifications).

Figure 3 shows a drawing of the short and long board stiffeners.

**Short Stiffener**




**Long Stiffener**

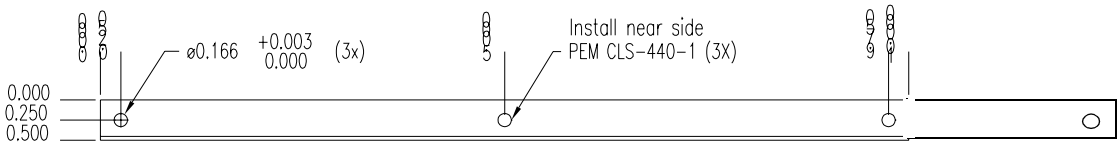



**Figure 3: Fabrication Drawing of Board Stiffeners**

# Requirements

- You must locate the connectors and guide pin holes exactly as shown in Figure 1 on page 12, so that the Daughterboard will fit onto the Adapter.
- The height of the DUT above the Daughterboard must not exceed 2.25 inches.

- The DUT signal traces (DUT1 through DUT640) are controlled impedance, and must be 93 ohms ± 10%. (All other signals are uncontrolled but will function correctly at 93 ohms.)
- You must make the following specific connections:
  - J1-A1 to J1-F48 (SEAT1)
  - J2-A1 to J2-F24 (SEAT2)
  - J3-A1 to J3-F48 (SEAT3)
  - J4-A1 to J4-F24 (SEAT4)
  - J5-A1 to J5-F24 (SEAT5)
  - J6-A1 to J6-F24 (SEAT6)

  (These connections pass a daisychain signal through all four J connectors to allow the ModelSource system to detect whether or not the Adapter is seated correctly.)
- You must provide a series termination of 4.7 ohms within 1 inch of the DUT's signal pins. Use as small a surface mount package as can practically be mounted.

# Routing Guidelines

Provide connections for your DUT device(s) on the Daughterboard. Route the DUT signals (DUT1 through DUT640) and other appropriate signals to the J connector pins according to the pinout listing in "J1–J6 Connector Pinouts" on page 29.

The following are some guidelines:

- For optimal pattern clock rates, ensure that all DUT signals are the same length, or nearly so (within 0.5 inch).
- Use *either* microstrip (preferred) *or* stripline for the signal layers, but do not mix them, because their propagation velocities are different. Use microstrip if the signal routing fits on two layers; use stripline if the signal routing requires more than two layers.
- For ease of testing, create test points for the following signals:
  - J1-D17 (KEEPALIVE)
  - J1-A15 (TRIGGER)
  - J1-A19 (PLAY)
  - J1-A17 (SAMPLE)
  - Any voltages used by the DUT

- J4-FP5–J4-FP8 (FANP12V), if used
- DUT signal used for DUT clock

- You can connect to any of the available power supplies listed in Table 1. Do not interconnect different power supplies.

**Table 1: Available Power Supplies**

| Pins | Signal | Power Supply |
|---|---|---|
| J2-AP5–J2-AP8<br>J4-AP5–J4-AP8 | P5V | +5V DC, 6A max |
| J2-AP1–J2-AP4 | ADJVCC1 | +3-5V DC, 6A max |
| J4-AP1–J4-AP4 | ADJVCC2 | +3-5V DC, 6A max |
| J4-FP1–J4-FP4 | M5V | -5.2V DC, 400mA max |
| J2-FP5–J2-FP8 | P12V | +12V DC, 400mA max |
| J4-FP5–J4-FP8 | FANP12V | +12V DC, 400mA max (for fan/heat sink only) |

- For bypass/decoupling capacitors, follow the DUT manufacturer's recommendations, if provided; otherwise, use the following guidelines:
  - For each supply of P5V, ADJVCC1 or ADJVCC2, provide 47µF, 16V tantalum (use two of these, if space permits).
  - For each supply of P12V, M5V, provide 10µF, 16V tantalum.
  - For bypass, for every 25 signal pins, place a pair of 0.1µF and 0.01µF high frequency X7R or NPO capacitors directly underneath the device, if possible, or around the perimeter of the device.

# 3 Connecting the Daughterboard

This section describes the Adapter and gives instructions for interconnecting it and the Daughterboard.

## Adapter Description

Figure 4 shows a drawing of the Adapter. The items of interest to the user are as follows:

- Connectors that mate with Daughterboard connectors J1–J6
- Ejectors for disconnecting the Daughterboard from the Adapter
- Guide pins that fit the Daughterboard guide pin holes to ensure correct orientation
- Test points for the signals TRIGGER, KEEPALIVE, PLAY, FEEDBACK, SAMPLE, ADJVCC1, +5V, -5V, and GND

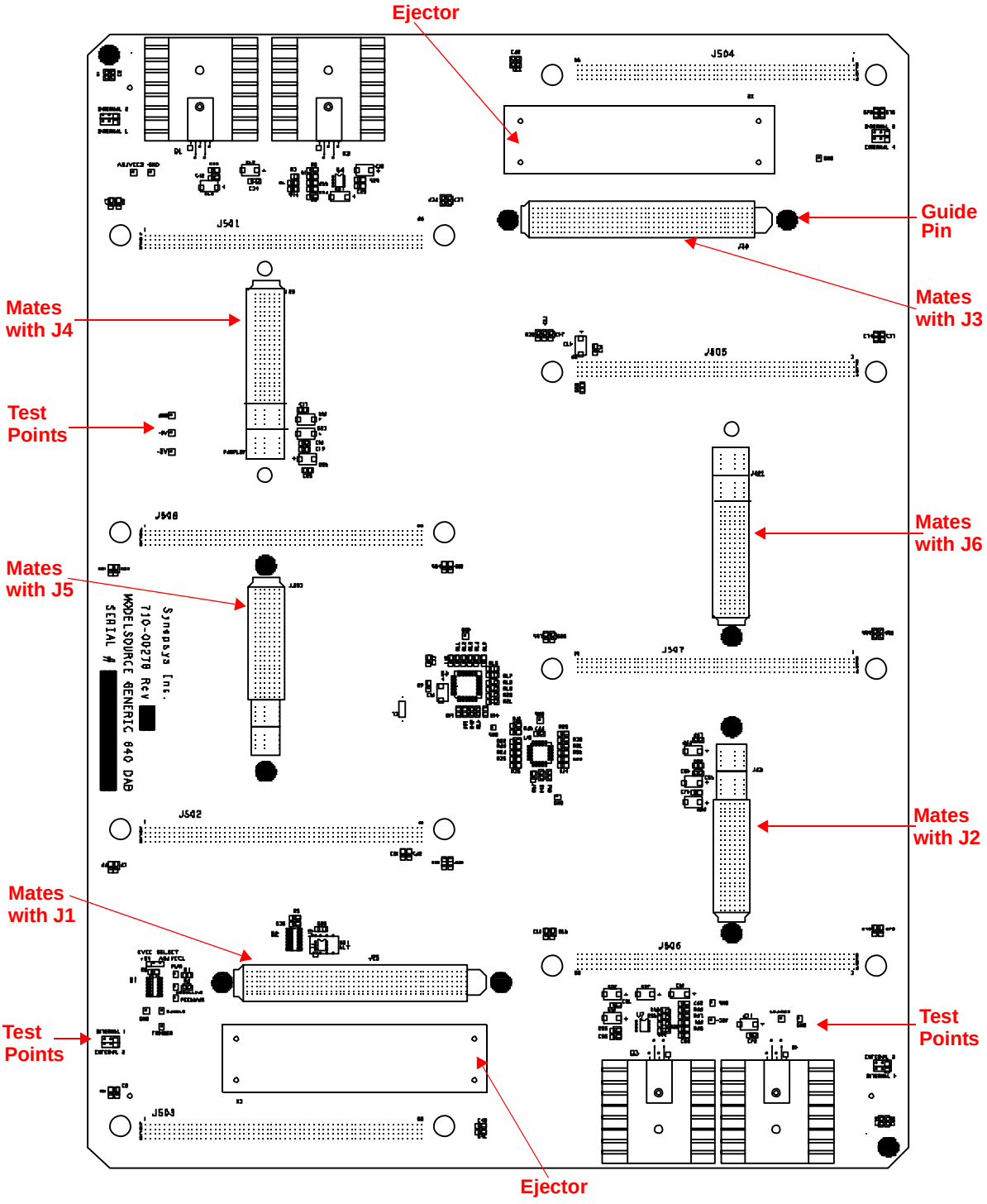



**Figure 4: The 640-pin Generic Device Adapter**

# Procedures

**Caution**

Do not connect or disconnect the Daughterboard to or from the Adapter while the Adapter is mounted on the ModelSource modeling systems.

To connect the Daughterboard to the Adapter, follow these steps:

1. Remove the lid from the Adapter.
2. Set the Daughterboard on the Adapter, engaging the guide pins through the guide pin holes.
3. Push firmly to seat.
4. Hand-tighten each of the Southco retractable screw fasteners.
5. Replace the Adapter lid.

To disconnect the Daughterboard from the Adapter, follow these steps:

1. Remove the lid from the Adapter.
2. Loosen the Southco retractable screw fasteners.
3. Push the ejectors on the Adapter.
4. Carefully lift the Daughterboard from the Adapter.
5. Replace the Adapter lid.

# 4 Developing the Shell Software

The Shell Software file requirements for a 640-pin Logic model are similar to those for standard Logic Models, and are summarized here. For more information, see the *Shell Software Reference Manual*.

## User-Generated Files

As for all Generic Device Adapters, you must create one or more Shell Software files that contain DUT-specific information, such as pinouts, device names, propagation delays, timing checks.

## Files Provided by Synopsys

- The Adapter Mapping (.ADP) file, GEN640.ADP: This file provides signal mapping between the Adapter and the ModelSource modeling system. You should be able to use this file without modification.
- A template Package Mapping (.PKG) file, GEN640.PKG: The .PKG file provides signal mapping between the Daughterboard and the DUT; the template file contains Daughterboard pin names mapped to duplicate pin names, for those pins used for DUT signals. You create the custom .PKG file by editing the template and replacing the duplicate pin names with your DUT pin names.

Figure 5 shows part of the template GEN640.PKG file provided by Synopsys.

```
{*****************************************************************}
{* Copyright (c) 2001by Synopsys, Incorporated                   *}
{*All rights reserved.                                            *}
{*****************************************************************}
{* Logic Model PACKAGE map file for Generic 640 Device Adapter.   *}
{*****************************************************************}
{ package_map_revision  A                                         *}
{*****************************************************************}
package_mapping
   J1A2   =   J1A2
   J1A3   =   J1A3
   J1A4   =   J1A4
   J1A5   =   J1A5
   J1A6   =   J1A6
   J1A7   =   J1A7
   J1A8   =   J1A8
   J1A9   =   J1A9
   J1A10  =  J1A10
   J1A11  =  J1A11
   J1A12  =  J1A12
   J1A13  =  J1A13
   J1A21  =  J1A21
   J1A22  =  J1A22
   J1A23  =  J1A23
   J1A24  =  J1A24
   J1A25  =  J1A25
```

**Figure 5: Partial GEN640.PKG File**

To customize this file for your DUT, you replace the first name on each line with the name of the appropriate signal on your DUT.

For example, you change the first line

```
J1A2   =   J1A2
```

to

```
DUTpname =   J1A2
```

# 5 Completing the Model

This chapter describes the tasks needed to complete the model: mounting the Adapter onto the Modeling Systems, labeling the Daughterboard, and verifying the model. It also describes how to unmount the Adapter from the Modeling Systems.

## Mounting the Adapter onto the ModelSource Modeling Systems

To mount the Adapter onto the ModelSource modeling systems, follow these steps:

1. Make a stack of four MS3200 or four MS3400 modeling systems (do not mix these two modeling systems). Connect the modeling systems together as described in "Chapter 2: Installation" in the *ModelSource User's Manual*.

**Note**

Do not stack the modelings systems more than four high. Ensure that the surface on which the modelers are stacked is flat and rigid.

2. Place the base of the Adapter against the front of the sets of four connected modeling systems, hanging the Adapter's hook receptacles on the positioning hooks of the modeling systems. Pull the Adapter gently towards you to make sure that it is securely balanced on the hooks.
3. Seat the modeling boards in the ModelSource modeling systems onto the Adapter as described in the following paragraph.

   Each modeling system has a knob on the right and on the left side for moving the top and bottom modeling boards, respectively, backwards and forwards. Turn each knob individually counterclockwise to bring each modeling board forward to connect with the Adapter.

# Labeling the Daughterboard

After you have completed the Shell Software and mounted the Adapter and Daughterboard onto the ModelSource modeling systems, you must verify the Daughterboard's label and update it if necessary.

**Note**

Ensure that the Daughterboard is seated on the Adapter before you verify and update the label. If the daughterboard is not seated, the software will report the label as "GEN640", the label of the Adapter itself.

If it is necessary to update the Daughterboard's label, use the lm Label Device Adapter utility to change the adapter's label to the *device_name* used in the model's Shell Software. For more details, refer to "Label Device Adapter" in the *ModelSource User's Manual*.

# Verifying the Model

After you have developed the model, you must verify it. For more information, see the *ModelSource User's Manual* and the *Logic Model Development Manual*.

**Note**

The pattern memory available for simulation is limited to the smallest amount of available memory on any one of the eight modeling boards in the four modelers.

# Unmounting the Adapter from the ModelSource Modeling Systems

To remove the Adapter from the ModelSource modeling systems, follow these steps:

1. Ensure that the Adapter is not currently in use (that is, the In Use LEDs are not illuminated).
2. Turn each knob individually clockwise, to unseat each modeling board connector from the Adapter.
3. Verify that the “Seated LED” on each modeling board is no longer illuminated.
4. Push the Adapter so that it is flush against the front panel of the modeling system assembly, and slide it up as far as you can.
5. Pull the Adapter straight out and away from the modeling system assembly.

# A
# J1–J6 Connector Pinouts

The pinouts for connectors J1 through J6 of the 640-pin Adapter and the Daughterboard are listed in Table 2. Do not use pins that are labeled RESERVED.

**Table 2: Pinouts for Connectors J1-J6**

| Connector | Pin | Signal |
|---|---|---|
| J1 | A1 | SEAT1 |
| J1 | A2 | DUT171 |
| J1 | A3 | DUT173 |
| J1 | A4 | DUT170 |
| J1 | A5 | DUT169 |
| J1 | A6 | DUT168 |
| J1 | A7 | DUT167 |
| J1 | A8 | DUT166 |
| J1 | A9 | DUT165 |
| J1 | A10 | DUT164 |
| J1 | A11 | DUT163 |
| J1 | A12 | DUT162 |
| J1 | A13 | DUT161 |
| J1 | A14 | NC |
| J1 | A15 | TRIGGER |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J1 | A16 | NC |
| J1 | A17 | SAMPLE |
| J1 | A18 | NC |
| J1 | A19 | PLAY |
| J1 | A20 | NC |
| J1 | A21 | DUT198 |
| J1 | A22 | DUT197 |
| J1 | A23 | DUT196 |
| J1 | A24 | DUT202 |
| J1 | A25 | DUT194 |
| J1 | A26 | DUT193 |
| J1 | A27 | DUT192 |
| J1 | A28 | DUT191 |
| J1 | A29 | DUT190 |
| J1 | A30 | DUT189 |
| J1 | A31 | DUT188 |
| J1 | A32 | DUT187 |
| J1 | A33 | DUT186 |
| J1 | A34 | DUT185 |
| J1 | A35 | DUT226 |
| J1 | A36 | DUT225 |
| J1 | A37 | DUT224 |
| J1 | A38 | DUT223 |
| J1 | A39 | DUT222 |
| J1 | A40 | DUT221 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J1 | A41 | DUT220 |
| J1 | A42 | DUT219 |
| J1 | A43 | DUT218 |
| J1 | A44 | DUT217 |
| J1 | A45 | DUT237 |
| J1 | A46 | DUT215 |
| J1 | A47 | DUT214 |
| J1 | A48 | DUT213 |
| J1 | C1 | NC |
| J1 | C2 | DUT172 |
| J1 | C3 | DUT174 |
| J1 | C4 | DUT175 |
| J1 | C5 | DUT176 |
| J1 | C6 | DUT177 |
| J1 | C7 | DUT178 |
| J1 | C8 | DUT179 |
| J1 | C9 | DUT180 |
| J1 | C10 | DUT181 |
| J1 | C11 | DUT182 |
| J1 | C12 | DUT183 |
| J1 | C13 | DUT184 |
| J1 | C14 | NC |
| J1 | C15 | NC |
| J1 | C16 | NC |
| J1 | C17 | TEMP |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J1 | C18 | NC |
| J1 | C19 | NC |
| J1 | C20 | NC |
| J1 | C21 | DUT199 |
| J1 | C22 | DUT200 |
| J1 | C23 | DUT201 |
| J1 | C24 | DUT195 |
| J1 | C25 | DUT203 |
| J1 | C26 | DUT204 |
| J1 | C27 | DUT205 |
| J1 | C28 | DUT206 |
| J1 | C29 | DUT207 |
| J1 | C30 | DUT208 |
| J1 | C31 | DUT209 |
| J1 | C32 | DUT210 |
| J1 | C33 | DUT211 |
| J1 | C34 | DUT212 |
| J1 | C35 | DUT227 |
| J1 | C36 | DUT228 |
| J1 | C37 | DUT229 |
| J1 | C38 | DUT230 |
| J1 | C39 | DUT231 |
| J1 | C40 | DUT232 |
| J1 | C41 | DUT233 |
| J1 | C42 | DUT234 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J1 | C43 | DUT235 |
| J1 | C44 | DUT236 |
| J1 | C45 | DUT216 |
| J1 | C46 | DUT238 |
| J1 | C47 | DUT239 |
| J1 | C48 | DUT240 |
| J1 | D1 | DUT11 |
| J1 | D2 | DUT13 |
| J1 | D3 | DUT10 |
| J1 | D4 | DUT9 |
| J1 | D5 | DUT8 |
| J1 | D6 | DUT7 |
| J1 | D7 | DUT6 |
| J1 | D8 | DUT5 |
| J1 | D9 | DUT4 |
| J1 | D10 | DUT3 |
| J1 | D11 | DUT2 |
| J1 | D12 | DUT1 |
| J1 | D13 | NC |
| J1 | D14 | NC |
| J1 | D15 | FEEDBACK |
| J1 | D16 | NC |
| J1 | D17 | KEEPALIVE |
| J1 | D18 | NC |
| J1 | D19 | NC |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J1 | D20 | DUT38 |
| J1 | D21 | DUT37 |
| J1 | D22 | DUT36 |
| J1 | D23 | DUT42 |
| J1 | D24 | DUT34 |
| J1 | D25 | DUT33 |
| J1 | D26 | DUT32 |
| J1 | D27 | DUT31 |
| J1 | D28 | DUT30 |
| J1 | D29 | DUT29 |
| J1 | D30 | DUT28 |
| J1 | D31 | DUT27 |
| J1 | D32 | DUT26 |
| J1 | D33 | DUT25 |
| J1 | D34 | DUT66 |
| J1 | D35 | DUT65 |
| J1 | D36 | DUT64 |
| J1 | D37 | DUT63 |
| J1 | D38 | DUT62 |
| J1 | D39 | DUT61 |
| J1 | D40 | DUT60 |
| J1 | D41 | DUT59 |
| J1 | D42 | DUT58 |
| J1 | D43 | DUT57 |
| J1 | D44 | DUT77 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J1 | D45 | DUT55 |
| J1 | D46 | DUT54 |
| J1 | D47 | DUT53 |
| J1 | D48 | NC |
| J1 | F1 | DUT12 |
| J1 | F2 | DUT14 |
| J1 | F3 | DUT15 |
| J1 | F4 | DUT16 |
| J1 | F5 | DUT17 |
| J1 | F6 | DUT18 |
| J1 | F7 | DUT19 |
| J1 | F8 | DUT20 |
| J1 | F9 | DUT21 |
| J1 | F10 | DUT22 |
| J1 | F11 | DUT23 |
| J1 | F12 | DUT24 |
| J1 | F13 | NC |
| J1 | F14 | EEOUT |
| J1 | F15 | EEIN |
| J1 | F16 | EECLK |
| J1 | F17 | EEPE |
| J1 | F18 | EESEL |
| J1 | F19 | EEVCC |
| J1 | F20 | DUT39 |
| J1 | F21 | DUT40 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J1 | F22 | DUT41 |
| J1 | F23 | DUT35 |
| J1 | F24 | DUT43 |
| J1 | F25 | DUT44 |
| J1 | F26 | DUT45 |
| J1 | F27 | DUT46 |
| J1 | F28 | DUT47 |
| J1 | F29 | DUT48 |
| J1 | F30 | DUT49 |
| J1 | F31 | DUT50 |
| J1 | F32 | DUT51 |
| J1 | F33 | DUT52 |
| J1 | F34 | DUT67 |
| J1 | F35 | DUT68 |
| J1 | F36 | DUT69 |
| J1 | F37 | DUT70 |
| J1 | F38 | DUT71 |
| J1 | F39 | DUT72 |
| J1 | F40 | DUT73 |
| J1 | F41 | DUT74 |
| J1 | F42 | DUT75 |
| J1 | F43 | DUT76 |
| J1 | F44 | DUT56 |
| J1 | F45 | DUT78 |
| J1 | F46 | DUT79 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J1 | F47 | DUT80 |
| J1 | F48 | SEAT1 |
| | | |
| J2 | A1 | SEAT2 |
| J2 | A2 | DUT160 |
| J2 | A3 | DUT159 |
| J2 | A4 | DUT158 |
| J2 | A5 | DUT136 |
| J2 | A6 | DUT156 |
| J2 | A7 | DUT155 |
| J2 | A8 | DUT154 |
| J2 | A9 | DUT153 |
| J2 | A10 | DUT152 |
| J2 | A11 | DUT151 |
| J2 | A12 | DUT150 |
| J2 | A13 | DUT149 |
| J2 | A14 | DUT148 |
| J2 | A15 | DUT147 |
| J2 | A16 | DUT132 |
| J2 | A17 | DUT131 |
| J2 | A18 | DUT130 |
| J2 | A19 | DUT129 |
| J2 | A20 | DUT128 |
| J2 | A21 | DUT127 |
| J2 | A22 | NC |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J2 | A23 | NC |
| J2 | A24 | NC |
| J2 | C1 | NC |
| J2 | C2 | DUT133 |
| J2 | C3 | DUT134 |
| J2 | C4 | DUT135 |
| J2 | C5 | DUT157 |
| J2 | C6 | DUT137 |
| J2 | C7 | DUT138 |
| J2 | C8 | DUT139 |
| J2 | C9 | DUT140 |
| J2 | C10 | DUT141 |
| J2 | C11 | DUT142 |
| J2 | C12 | DUT143 |
| J2 | C13 | DUT144 |
| J2 | C14 | DUT145 |
| J2 | C15 | DUT146 |
| J2 | C16 | DUT105 |
| J2 | C17 | DUT106 |
| J2 | C18 | DUT107 |
| J2 | C19 | DUT108 |
| J2 | C20 | DUT109 |
| J2 | C21 | DUT110 |
| J2 | C22 | NC |
| J2 | C23 | NC |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J2 | C24 | NC |
| J2 | D1 | NC |
| J2 | D2 | DUT91 |
| J2 | D3 | DUT93 |
| J2 | D4 | DUT90 |
| J2 | D5 | DUT89 |
| J2 | D6 | DUT88 |
| J2 | D7 | DUT87 |
| J2 | D8 | DUT86 |
| J2 | D9 | DUT85 |
| J2 | D10 | DUT84 |
| J2 | D11 | DUT83 |
| J2 | D12 | DUT82 |
| J2 | D13 | DUT81 |
| J2 | D14 | DUT118 |
| J2 | D15 | DUT117 |
| J2 | D16 | DUT116 |
| J2 | D17 | DUT122 |
| J2 | D18 | DUT114 |
| J2 | D19 | DUT113 |
| J2 | D20 | DUT112 |
| J2 | D21 | DUT111 |
| J2 | D22 | NC |
| J2 | D23 | NC |
| J2 | D24 | NC |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J2 | F1 | NC |
| J2 | F2 | DUT92 |
| J2 | F3 | DUT94 |
| J2 | F4 | DUT95 |
| J2 | F5 | DUT96 |
| J2 | F6 | DUT97 |
| J2 | F7 | DUT98 |
| J2 | F8 | DUT99 |
| J2 | F9 | DUT100 |
| J2 | F10 | DUT101 |
| J2 | F11 | DUT102 |
| J2 | F12 | DUT103 |
| J2 | F13 | DUT104 |
| J2 | F14 | DUT119 |
| J2 | F15 | DUT120 |
| J2 | F16 | DUT121 |
| J2 | F17 | DUT115 |
| J2 | F18 | DUT123 |
| J2 | F19 | DUT124 |
| J2 | F20 | DUT125 |
| J2 | F21 | DUT126 |
| J2 | F22 | NC |
| J2 | F23 | NC |
| J2 | F24 | SEAT2 |
| J2 | AP1 | ADJVCC1 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J2 | AP2 | ADJVCC1 |
| J2 | AP3 | ADJVCC1 |
| J2 | AP4 | ADJVCC1 |
| J2 | AP5 | P5V |
| J2 | AP6 | P5V |
| J2 | AP7 | P5V |
| J2 | AP8 | P5V |
| J2 | DP1 | GND |
| J2 | DP2 | GND |
| J2 | DP3 | GND |
| J2 | DP4 | GND |
| J2 | DP5 | GND |
| J2 | DP6 | GND |
| J2 | DP7 | GND |
| J2 | DP8 | GND |
| J2 | FP1 | NC |
| J2 | FP2 | NC |
| J2 | FP3 | NC |
| J2 | FP4 | NC |
| J2 | FP5 | P12V |
| J2 | FP6 | P12V |
| J2 | FP7 | P12V |
| J2 | FP8 | P12V |
| | | |
| J3 | A1 | SEAT3 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J3 | A2 | DUT640 |
| J3 | A3 | DUT639 |
| J3 | A4 | DUT638 |
| J3 | A5 | DUT616 |
| J3 | A6 | DUT636 |
| J3 | A7 | DUT635 |
| J3 | A8 | DUT634 |
| J3 | A9 | DUT633 |
| J3 | A10 | DUT632 |
| J3 | A11 | DUT631 |
| J3 | A12 | DUT630 |
| J3 | A13 | DUT629 |
| J3 | A14 | DUT628 |
| J3 | A15 | DUT627 |
| J3 | A16 | DUT612 |
| J3 | A17 | DUT611 |
| J3 | A18 | DUT610 |
| J3 | A19 | DUT609 |
| J3 | A20 | DUT608 |
| J3 | A21 | DUT607 |
| J3 | A22 | DUT606 |
| J3 | A23 | DUT605 |
| J3 | A24 | DUT604 |
| J3 | A25 | DUT603 |
| J3 | A26 | DUT595 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J3 | A27 | DUT601 |
| J3 | A28 | DUT600 |
| J3 | A29 | DUT599 |
| J3 | A30 | NC |
| J3 | A31 | RESERVED (AD13) |
| J3 | A32 | RESERVED (AD7) |
| J3 | A33 | RESERVED (AD5) |
| J3 | A34 | RESERVED (AD0) |
| J3 | A35 | RESERVED (-ACK) |
| J3 | A36 | NC |
| J3 | A37 | DUT584 |
| J3 | A38 | DUT583 |
| J3 | A39 | DUT582 |
| J3 | A40 | DUT581 |
| J3 | A41 | DUT580 |
| J3 | A42 | DUT579 |
| J3 | A43 | DUT578 |
| J3 | A44 | DUT577 |
| J3 | A45 | DUT576 |
| J3 | A46 | DUT575 |
| J3 | A47 | DUT574 |
| J3 | A48 | DUT572 |
| J3 | C1 | NC |
| J3 | C2 | DUT613 |
| J3 | C3 | DUT614 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J3 | C4 | DUT615 |
| J3 | C5 | DUT637 |
| J3 | C6 | DUT617 |
| J3 | C7 | DUT618 |
| J3 | C8 | DUT619 |
| J3 | C9 | DUT620 |
| J3 | C10 | DUT621 |
| J3 | C11 | DUT622 |
| J3 | C12 | DUT623 |
| J3 | C13 | DUT624 |
| J3 | C14 | DUT625 |
| J3 | C15 | DUT626 |
| J3 | C16 | DUT585 |
| J3 | C17 | DUT586 |
| J3 | C18 | DUT587 |
| J3 | C19 | DUT588 |
| J3 | C20 | DUT589 |
| J3 | C21 | DUT590 |
| J3 | C22 | DUT591 |
| J3 | C23 | DUT592 |
| J3 | C24 | DUT593 |
| J3 | C25 | DUT594 |
| J3 | C26 | DUT602 |
| J3 | C27 | DUT596 |
| J3 | C28 | DUT597 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J3 | C29 | DUT598 |
| J3 | C30 | NC |
| J3 | C31 | RESERVED (AD11) |
| J3 | C32 | RESERVED (AD12) |
| J3 | C33 | RESERVED (AD6) |
| J3 | C34 | RESERVED (AD2) |
| J3 | C35 | RESERVED (-WR) |
| J3 | C36 | NC |
| J3 | C37 | DUT561 |
| J3 | C38 | DUT562 |
| J3 | C39 | DUT563 |
| J3 | C40 | DUT564 |
| J3 | C41 | DUT565 |
| J3 | C42 | DUT566 |
| J3 | C43 | DUT567 |
| J3 | C44 | DUT568 |
| J3 | C45 | DUT569 |
| J3 | C46 | DUT570 |
| J3 | C47 | DUT573 |
| J3 | C48 | DUT571 |
| J3 | D1 | DUT480 |
| J3 | D2 | DUT479 |
| J3 | D3 | DUT478 |
| J3 | D4 | DUT456 |
| J3 | D5 | DUT476 |

**Table 2: Pinouts for Connectors J1-J6**

| Connector | Pin | Signal |
|---|---|---|
| J3 | D6 | DUT475 |
| J3 | D7 | DUT474 |
| J3 | D8 | DUT473 |
| J3 | D9 | DUT472 |
| J3 | D10 | DUT471 |
| J3 | D11 | DUT470 |
| J3 | D12 | DUT469 |
| J3 | D13 | DUT468 |
| J3 | D14 | DUT467 |
| J3 | D15 | DUT452 |
| J3 | D16 | DUT451 |
| J3 | D17 | DUT450 |
| J3 | D18 | DUT449 |
| J3 | D19 | DUT448 |
| J3 | D20 | DUT447 |
| J3 | D21 | DUT446 |
| J3 | D22 | DUT445 |
| J3 | D23 | DUT444 |
| J3 | D24 | DUT443 |
| J3 | D25 | DUT435 |
| J3 | D26 | DUT441 |
| J3 | D27 | DUT440 |
| J3 | D28 | DUT439 |
| J3 | D29 | NC |
| J3 | D30 | RESERVED (AD10) |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J3 | D31 | RESERVED (AD9) |
| J3 | D32 | RESERVED (AD3) |
| J3 | D33 | RESERVED (AD4) |
| J3 | D34 | RESERVED (-RD) |
| J3 | D35 | NC |
| J3 | D36 | DUT424 |
| J3 | D37 | DUT423 |
| J3 | D38 | DUT422 |
| J3 | D39 | DUT421 |
| J3 | D40 | DUT420 |
| J3 | D41 | DUT419 |
| J3 | D42 | DUT418 |
| J3 | D43 | DUT417 |
| J3 | D44 | DUT416 |
| J3 | D45 | DUT415 |
| J3 | D46 | DUT414 |
| J3 | D47 | DUT412 |
| J3 | D48 | NC |
| J3 | F1 | DUT453 |
| J3 | F2 | DUT454 |
| J3 | F3 | DUT455 |
| J3 | F4 | DUT477 |
| J3 | F5 | DUT457 |
| J3 | F6 | DUT458 |
| J3 | F7 | DUT459 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J3 | F8 | DUT460 |
| J3 | F9 | DUT461 |
| J3 | F10 | DUT462 |
| J3 | F11 | DUT463 |
| J3 | F12 | DUT464 |
| J3 | F13 | DUT465 |
| J3 | F14 | DUT466 |
| J3 | F15 | DUT425 |
| J3 | F16 | DUT426 |
| J3 | F17 | DUT427 |
| J3 | F18 | DUT428 |
| J3 | F19 | DUT429 |
| J3 | F20 | DUT430 |
| J3 | F21 | DUT431 |
| J3 | F22 | DUT432 |
| J3 | F23 | DUT433 |
| J3 | F24 | DUT434 |
| J3 | F25 | DUT442 |
| J3 | F26 | DUT436 |
| J3 | F27 | DUT437 |
| J3 | F28 | DUT438 |
| J3 | F29 | NC |
| J3 | F30 | RESERVED (AD14) |
| J3 | F31 | RESERVED (AD8) |
| J3 | F32 | RESERVED (AD1) |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J3 | F33 | RESERVED (AD15) |
| J3 | F34 | RESERVED (-AS) |
| J3 | F35 | NC |
| J3 | F36 | DUT401 |
| J3 | F37 | DUT402 |
| J3 | F38 | DUT403 |
| J3 | F39 | DUT404 |
| J3 | F40 | DUT405 |
| J3 | F41 | DUT406 |
| J3 | F42 | DUT407 |
| J3 | F43 | DUT408 |
| J3 | F44 | DUT409 |
| J3 | F45 | DUT410 |
| J3 | F46 | DUT413 |
| J3 | F47 | DUT411 |
| J3 | F48 | SEAT3 |
| | | |
| J4 | A1 | SEAT4 |
| J4 | A2 | DUT560 |
| J4 | A3 | DUT559 |
| J4 | A4 | DUT558 |
| J4 | A5 | DUT536 |
| J4 | A6 | DUT556 |
| J4 | A7 | DUT555 |
| J4 | A8 | DUT554 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J4 | A9 | DUT553 |
| J4 | A10 | DUT552 |
| J4 | A11 | DUT551 |
| J4 | A12 | DUT550 |
| J4 | A13 | DUT549 |
| J4 | A14 | DUT548 |
| J4 | A15 | DUT547 |
| J4 | A16 | DUT532 |
| J4 | A17 | DUT531 |
| J4 | A18 | DUT530 |
| J4 | A19 | DUT529 |
| J4 | A20 | DUT528 |
| J4 | A21 | DUT527 |
| J4 | A22 | NC |
| J4 | A23 | NC |
| J4 | A24 | NC |
| J4 | C1 | NC |
| J4 | C2 | DUT533 |
| J4 | C3 | DUT534 |
| J4 | C4 | DUT535 |
| J4 | C5 | DUT557 |
| J4 | C6 | DUT537 |
| J4 | C7 | DUT538 |
| J4 | C8 | DUT539 |
| J4 | C9 | DUT540 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J4 | C10 | DUT541 |
| J4 | C11 | DUT542 |
| J4 | C12 | DUT543 |
| J4 | C13 | DUT544 |
| J4 | C14 | DUT545 |
| J4 | C15 | DUT546 |
| J4 | C16 | DUT505 |
| J4 | C17 | DUT506 |
| J4 | C18 | DUT507 |
| J4 | C19 | DUT508 |
| J4 | C20 | DUT509 |
| J4 | C21 | DUT510 |
| J4 | C22 | NC |
| J4 | C23 | NC |
| J4 | C24 | NC |
| J4 | D1 | NC |
| J4 | D2 | DUT491 |
| J4 | D3 | DUT493 |
| J4 | D4 | DUT490 |
| J4 | D5 | DUT489 |
| J4 | D6 | DUT488 |
| J4 | D7 | DUT487 |
| J4 | D8 | DUT486 |
| J4 | D9 | DUT485 |
| J4 | D10 | DUT484 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J4 | D11 | DUT483 |
| J4 | D12 | DUT482 |
| J4 | D13 | DUT481 |
| J4 | D14 | DUT518 |
| J4 | D15 | DUT517 |
| J4 | D16 | DUT516 |
| J4 | D17 | DUT522 |
| J4 | D18 | DUT514 |
| J4 | D19 | DUT513 |
| J4 | D20 | DUT512 |
| J4 | D21 | DUT511 |
| J4 | D22 | NC |
| J4 | D23 | NC |
| J4 | D24 | NC |
| J4 | F1 | NC |
| J4 | F2 | DUT492 |
| J4 | F3 | DUT494 |
| J4 | F4 | DUT495 |
| J4 | F5 | DUT496 |
| J4 | F6 | DUT497 |
| J4 | F7 | DUT498 |
| J4 | F8 | DUT499 |
| J4 | F9 | DUT500 |
| J4 | F10 | DUT501 |
| J4 | F11 | DUT502 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J4 | F12 | DUT503 |
| J4 | F13 | DUT504 |
| J4 | F14 | DUT519 |
| J4 | F15 | DUT520 |
| J4 | F16 | DUT521 |
| J4 | F17 | DUT515 |
| J4 | F18 | DUT523 |
| J4 | F19 | DUT524 |
| J4 | F20 | DUT525 |
| J4 | F21 | DUT526 |
| J4 | F22 | NC |
| J4 | F23 | NC |
| J4 | F24 | SEAT4 |
| J4 | AP1 | ADJVCC2 |
| J4 | AP2 | ADJVCC2 |
| J4 | AP3 | ADJVCC2 |
| J4 | AP4 | ADJVCC2 |
| J4 | AP5 | P5V |
| J4 | AP6 | P5V |
| J4 | AP7 | P5V |
| J4 | AP8 | P5V |
| J4 | DP1 | GND |
| J4 | DP2 | GND |
| J4 | DP3 | GND |
| J4 | DP4 | GND |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J4 | DP5 | GND |
| J4 | DP6 | GND |
| J4 | DP7 | GND |
| J4 | DP8 | GND |
| J4 | FP1 | M5V |
| J4 | FP2 | M5V |
| J4 | FP3 | M5V |
| J4 | FP4 | M5V |
| J4 | FP5 | FANP12V |
| J4 | FP6 | FANP12V |
| J4 | FP7 | FANP12V |
| J4 | FP8 | FANP12V |
| | | |
| J5 | A1 | SEAT5 |
| J5 | A2 | DUT400 |
| J5 | A3 | DUT399 |
| J5 | A4 | DUT398 |
| J5 | A5 | DUT376 |
| J5 | A6 | DUT396 |
| J5 | A7 | DUT395 |
| J5 | A8 | DUT394 |
| J5 | A9 | DUT393 |
| J5 | A10 | DUT392 |
| J5 | A11 | DUT391 |
| J5 | A12 | DUT390 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J5 | A13 | DUT389 |
| J5 | A14 | DUT388 |
| J5 | A15 | DUT387 |
| J5 | A16 | DUT372 |
| J5 | A17 | DUT371 |
| J5 | A18 | DUT370 |
| J5 | A19 | DUT369 |
| J5 | A20 | DUT368 |
| J5 | A21 | DUT367 |
| J5 | A22 | NC |
| J5 | A23 | NC |
| J5 | A24 | NC |
| J5 | C1 | NC |
| J5 | C2 | DUT373 |
| J5 | C3 | DUT374 |
| J5 | C4 | DUT375 |
| J5 | C5 | DUT397 |
| J5 | C6 | DUT377 |
| J5 | C7 | DUT378 |
| J5 | C8 | DUT379 |
| J5 | C9 | DUT380 |
| J5 | C10 | DUT381 |
| J5 | C11 | DUT382 |
| J5 | C12 | DUT383 |
| J5 | C13 | DUT384 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J5 | C14 | DUT385 |
| J5 | C15 | DUT386 |
| J5 | C16 | DUT345 |
| J5 | C17 | DUT346 |
| J5 | C18 | DUT347 |
| J5 | C19 | DUT348 |
| J5 | C20 | DUT349 |
| J5 | C21 | DUT350 |
| J5 | C22 | NC |
| J5 | C23 | NC |
| J5 | C24 | NC |
| J5 | D1 | NC |
| J5 | D2 | DUT331 |
| J5 | D3 | DUT333 |
| J5 | D4 | DUT330 |
| J5 | D5 | DUT329 |
| J5 | D6 | DUT328 |
| J5 | D7 | DUT327 |
| J5 | D8 | DUT326 |
| J5 | D9 | DUT325 |
| J5 | D10 | DUT324 |
| J5 | D11 | DUT323 |
| J5 | D12 | DUT322 |
| J5 | D13 | DUT321 |
| J5 | D14 | DUT358 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J5 | D15 | DUT357 |
| J5 | D16 | DUT356 |
| J5 | D17 | DUT362 |
| J5 | D18 | DUT354 |
| J5 | D19 | DUT353 |
| J5 | D20 | DUT352 |
| J5 | D21 | DUT351 |
| J5 | D22 | NC |
| J5 | D23 | NC |
| J5 | D24 | NC |
| J5 | F1 | NC |
| J5 | F2 | DUT332 |
| J5 | F3 | DUT334 |
| J5 | F4 | DUT335 |
| J5 | F5 | DUT336 |
| J5 | F6 | DUT337 |
| J5 | F7 | DUT338 |
| J5 | F8 | DUT339 |
| J5 | F9 | DUT340 |
| J5 | F10 | DUT341 |
| J5 | F11 | DUT342 |
| J5 | F12 | DUT343 |
| J5 | F13 | DUT344 |
| J5 | F14 | DUT359 |
| J5 | F15 | DUT360 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J5 | F16 | DUT361 |
| J5 | F17 | DUT355 |
| J5 | F18 | DUT363 |
| J5 | F19 | DUT364 |
| J5 | F20 | DUT365 |
| J5 | F21 | DUT366 |
| J5 | F22 | NC |
| J5 | F23 | NC |
| J5 | F24 | SEAT5 |
| J5 | AP1 | RESERVED |
| J5 | AP2 | RESERVED |
| J5 | AP3 | RESERVED |
| J5 | AP4 | RESERVED |
| J5 | AP5 | RESERVED |
| J5 | AP6 | RESERVED |
| J5 | AP7 | RESERVED |
| J5 | AP8 | RESERVED |
| J5 | DP1 | GND |
| J5 | DP2 | GND |
| J5 | DP3 | GND |
| J5 | DP4 | GND |
| J5 | DP5 | GND |
| J5 | DP6 | GND |
| J5 | DP7 | GND |
| J5 | DP8 | GND |

**Table 2: Pinouts for Connectors J1-J6**

| Connector | Pin | Signal |
|---|---|---|
| J5 | FP1 | RESERVED |
| J5 | FP2 | RESERVED |
| J5 | FP3 | RESERVED |
| J5 | FP4 | RESERVED |
| J5 | FP5 | RESERVED |
| J5 | FP6 | RESERVED |
| J5 | FP7 | RESERVED |
| J5 | FP8 | RESERVED |
| | | |
| J6 | A1 | SEAT6 |
| J6 | A2 | DUT320 |
| J6 | A3 | DUT319 |
| J6 | A4 | DUT318 |
| J6 | A5 | DUT296 |
| J6 | A6 | DUT316 |
| J6 | A7 | DUT315 |
| J6 | A8 | DUT314 |
| J6 | A9 | DUT313 |
| J6 | A10 | DUT312 |
| J6 | A11 | DUT311 |
| J6 | A12 | DUT310 |
| J6 | A13 | DUT309 |
| J6 | A14 | DUT308 |
| J6 | A15 | DUT307 |
| J6 | A16 | DUT292 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J6 | A17 | DUT291 |
| J6 | A18 | DUT290 |
| J6 | A19 | DUT289 |
| J6 | A20 | DUT288 |
| J6 | A21 | DUT287 |
| J6 | A22 | NC |
| J6 | A23 | NC |
| J6 | A24 | NC |
| J6 | C1 | NC |
| J6 | C2 | DUT293 |
| J6 | C3 | DUT294 |
| J6 | C4 | DUT295 |
| J6 | C5 | DUT317 |
| J6 | C6 | DUT297 |
| J6 | C7 | DUT298 |
| J6 | C8 | DUT299 |
| J6 | C9 | DUT300 |
| J6 | C10 | DUT301 |
| J6 | C11 | DUT302 |
| J6 | C12 | DUT303 |
| J6 | C13 | DUT304 |
| J6 | C14 | DUT305 |
| J6 | C15 | DUT306 |
| J6 | C16 | DUT265 |
| J6 | C17 | DUT266 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J6 | C18 | DUT267 |
| J6 | C19 | DUT268 |
| J6 | C20 | DUT269 |
| J6 | C21 | DUT270 |
| J6 | C22 | NC |
| J6 | C23 | NC |
| J6 | C24 | NC |
| J6 | D1 | NC |
| J6 | D2 | DUT251 |
| J6 | D3 | DUT253 |
| J6 | D4 | DUT250 |
| J6 | D5 | DUT249 |
| J6 | D6 | DUT248 |
| J6 | D7 | DUT247 |
| J6 | D8 | DUT246 |
| J6 | D9 | DUT245 |
| J6 | D10 | DUT244 |
| J6 | D11 | DUT243 |
| J6 | D12 | DUT242 |
| J6 | D13 | DUT241 |
| J6 | D14 | DUT278 |
| J6 | D15 | DUT277 |
| J6 | D16 | DUT276 |
| J6 | D17 | DUT282 |
| J6 | D18 | DUT274 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J6 | D19 | DUT273 |
| J6 | D20 | DUT272 |
| J6 | D21 | DUT271 |
| J6 | D22 | NC |
| J6 | D23 | NC |
| J6 | D24 | NC |
| J6 | F1 | NC |
| J6 | F2 | DUT252 |
| J6 | F3 | DUT254 |
| J6 | F4 | DUT255 |
| J6 | F5 | DUT256 |
| J6 | F6 | DUT257 |
| J6 | F7 | DUT258 |
| J6 | F8 | DUT259 |
| J6 | F9 | DUT260 |
| J6 | F10 | DUT261 |
| J6 | F11 | DUT262 |
| J6 | F12 | DUT263 |
| J6 | F13 | DUT264 |
| J6 | F14 | DUT279 |
| J6 | F15 | DUT280 |
| J6 | F16 | DUT281 |
| J6 | F17 | DUT275 |
| J6 | F18 | DUT283 |
| J6 | F19 | DUT284 |

## Table 2: Pinouts for Connectors J1-J6

| Connector | Pin | Signal |
|---|---|---|
| J6 | F20 | DUT285 |
| J6 | F21 | DUT286 |
| J6 | F22 | NC |
| J6 | F23 | NC |
| J6 | F24 | SEAT6 |
| J6 | AP1 | RESERVED |
| J6 | AP2 | RESERVED |
| J6 | AP3 | RESERVED |
| J6 | AP4 | RESERVED |
| J6 | AP5 | RESERVED |
| J6 | AP6 | RESERVED |
| J6 | AP7 | RESERVED |
| J6 | AP8 | RESERVED |
| J6 | DP1 | GND |
| J6 | DP2 | GND |
| J6 | DP3 | GND |
| J6 | DP4 | GND |
| J6 | DP5 | GND |
| J6 | DP6 | GND |
| J6 | DP7 | GND |
| J6 | DP8 | GND |
| J6 | FP1 | NC |
| J6 | FP2 | NC |
| J6 | FP3 | NC |
| J6 | FP4 | NC |

**Table 2: Pinouts for Connectors J1-J6**

| Connector | Pin | Signal |
|---|---|---|
| J6 | FP5 | RESERVED |
| J6 | FP6 | RESERVED |
| J6 | FP7 | RESERVED |
| J6 | FP8 | RESERVED |